

After the death of the bee the mites continue to live for several days, and the great majority of them seem to die finally without leaving the body of the host. Occasionally a few adult mites may be found moving about on the dead bodies of the bees. Whilst dissecting some healthy hive-bees from Golder's Green, I found a single specimen of a male *Tarsonemus* (sensu stricto) in one of the thoracic tracheæ—so that more than one species of mite of this family can gain access to the respiratory system of the bee. I have also found specimens of *Tarsonemus* (s. s.) on dry specimens of *Apis dorsata* and *Apis florealis* (both Indian species of bees) and on *Apis mellifica*, var. *indica* (from Singapore).

LX.—*Three new Species of Marmosa, with a Note on Didelphys waterhousei, Tomes.* By OLDFIELD THOMAS.

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IN 1917 Dr. Carlos Bruch, Director of the La Plata Museum, published* a charming little account of the habits and nests of the Comadreja—the small *Marmosas*—of Argentina, and mentioned specimens of this group which he had obtained in San Luis. These specimens he has now sent me for determination, and I find that they represent a very distinct species, decidedly smaller than any hitherto known from Argentina. I propose to name it, in honour of its discoverer,

Marmosa bruchi, sp. n.

A very small species of the *M. marmota* group.

Size exceedingly small, the smallest of the genus; just a shade smaller than the Para *M. emilia*, the feet much smaller. General pattern of coloration as in *marmota* and *citella*, but the colour itself very pale, though this may have been slightly affected by the action of alcohol. Dorsal area rather greyer than "drab"; intermediate lateral area "light drab"; under surface pure sharply defined white. Face without marked dark patches, the actual eyelids alone brown; outside these the area round the eyes whitish. Ears large—no prominent white patches round their bases. Limbs white, the body-colour scarcely encroaching at all upon them. Tail of medium length, slightly incrassated, hairy at base only, drab above, whitish below.

Skull lightly built, of normal shape. Nasals slightly

* Revist. Jard. Zool. Buenos Aires, December 1917, no. 52.

expanded in front of the anterior point of the frontals, rather more so than in *citella*. Bullæ fairly large, proportionately about as in *citella*, much larger than in *emilie*. Premolars evenly increasing in length backwards.

Dimensions of no. 1048 (taken on the skin):—

Head and body 75 mm.; tail 89; hind foot (wet) 11·3; ear (wet) 15·5.

Skull: greatest length 23·5; condylo-basal length 23·1; zygomatic breadth 13·5; nasals $10 \times 2\cdot1$; interorbital breadth 3·7; breadth of brain-case 10·1; palatal length 12·2; maxillary tooth-series 8·8; combined length of three anterior molariform teeth 4·1.

Hab. San Luis, Argentina. Original specimens from Alto Pencoso, just west of San Luis city.

Type. Adult male. B.M. no. 21. 4. 21. 8. Original number 1048. Collected February 1914, and presented by Dr. Carlos Bruch. Two specimens.

This beautiful little "comadreja" is widely different from any species hitherto known by its small size and pale colour, the latter indicating a more or less desert habitat. In bulk it is about equal to the smallest described species of *Marmosa*—*M. emilie* of Para,—but is only related to the group of species to which *M. elegans*, *marmota*, and *citella* belong, from any of which it is readily distinguished by its small size, and notably its tiny feet.

In working out *M. bruchi* I have re-examined some specimens of the same group from the Northern Chaco of Paraguay, presented to the British Museum by the Marquis de Wavrin. The *Marmosa* now also proves to be new, in spite of its superficial resemblance to *M. marmota* and *citella*. It may be called

Marmosa verax, sp. n.

Like *M. citella*, but with smaller bullæ and shorter feet.

Size just about as in *M. citella*, consequently smaller than in *M. marmota*, the species of Paraguay east of the main river. Coloration quite as in those two species. Hind feet proportionally small, shorter than in *citella*.

Skull as in *citella*, with the same slightly expanded nasals and unridged supraorbital edges; but the bullæ are markedly smaller, a diagonal measurement taken on a line running from the basion to the middle of the zygoma 2·5 mm., while it is from 3 to 3·2 mm. in *citella*.

Dimensions of the type:—

Head and body 125 mm.; tail 130; hind foot 14; ear 23.

Skull: condylo-basal length 30; zygomatic breadth 17.3; nasals 12.2×3.2 ; interorbital breadth 4.4; breadth of brain-case 11; palatal length 15.7; maxillary tooth-series 10.8; three anterior molariform teeth 4.4.

Hab. Northern Chaco of Paraguay. Type from Mision, west of Concepcion.

Type. Old female with much worn teeth. B.M. no. 20.12.18.34. Original number 15. Collected 29th July, 1920, and presented by the Marquis de Wavrin. Two specimens.

Of the three species of this group that occur in the Paraguay region, *M. marmota*, the largest, occurs in Paraguay proper—type-locality Tapoua, specimens seen from Sapucay and Asuncion,—while the smaller *M. citella* occurs at Goya, Corrientes, to the south of Paraguay. Now the present species, agreeing in size with the southern one, occurs to the north of *marmota*, in the Chaco Boreal.

All three are alike in colour, but may be readily distinguished by their respective sizes and the development of their bullæ.

This makes the third new species discovered by the Marquis de Wavrin, whose little collection from the Chaco has proved of remarkable interest*.

Marmosa mimetra, sp. n.

A large species resembling *M. chapmani* of Trinidad.

Size and colour almost exactly as in *M. chapmani*, though the under surface is much more strongly suffused with buffy—"light ochraceous buff"; back near "cinnamon." Ears decidedly smaller than in *chapmani*. Feet large and heavy. Tail proportionally rather short, with about a half or three-quarters of an inch furry like the body. The remainder pale brown, sometimes spotted with whitish, even more completely naked than usual, decidedly less hairy than in *chapmani*, the hairs quite minute, and imperceptible without a strong lens.

Skull as in *chapmani*, with strong supraorbital ridges, not broadly overhanging the orbits. Canines of normal shape, not broadened antero-posteriorly at base, as they are in the available specimens of *chapmani*.

Dimensions of the type (measured in flesh):—

Head and body 166 mm.; tail 205; hind foot 24; ear 25.

Skull: greatest length 41.7; zygomatic breadth 22.2; nasals 19×5.1 ; interorbital breadth 7.3; breadth across

* Cf. *Oryzomys wavrini* and *Akodon toba*, supra, pp. 177-178.

postorbital projection 8·6 ; maxillary tooth-row 15·3 ; three anterior molariform teeth 6·5.

Hab. W. Ecuador. Type from Santo Domingo, 0° 13' S., 79° 6' W. Alt. 1600'.

Type. Old male. B.M. no. 15. 1. 1. 54. Original number 424. Collected 19th July, 1914, by Gilbert Hammond. Presented by Oldfield Thomas. Four specimens.

This *Marmosa* is remarkably like the Trinidad *M. chapmani*, but no species similar to it seem to have been recorded from west of the Andes. Its large size, long feet, and general robust build all make it resemble *M. chapmani*, from which it differs by its smaller ears, more naked tail, and normal-shaped canines, apart from the very wide difference in locality.

Note on Didelphys waterhousei, Tomes.

In his recent important work—'Genera Mammalium' *—Sr. Cabrera has placed my *Marmosa germana*, from the Oriente of Ecuador, as a synonym of Tomes's *waterhousei*, supposing the latter, like *germana*, to be a member of the *cinerea* group. This mistake has naturally arisen from the carelessness with which Tomes allowed a figure of Waterhouse's specimen to be published as his *D. waterhousei*, when at the same time he was describing under that name the skin brought home by Fraser from Ecuador. Now the two animals are really totally different. Waterhouse's specimen was an immature specimen without locality, but clearly a real grey opossum of the *cinerea* group. It is still in the Museum, and bears the number 42. 4. 29. 70, but is indeterminable with any further exactitude. The true *waterhousei*, however, as based on the Ecuador skin, is quite of a different group, as may be seen by the figure of its skull published on p. 303 of the same volume † in which the species was described. This skull, now in the Museum (no. 7. 1. 1. 215), has no resemblance to that of any member of the *cinerea* group, though, unfortunately, owing to the disappearance of the type-skin, I am for the present unable to identify it more exactly.

Although with unusually well-developed postorbital processes, it would appear to belong to the *murina* group, to whose members its colour, as described by Tomes, indicates considerable resemblance.

Whether the ordinary Ecuadorean species of that group—a form nearly related to *M. mitis*—ever develops such processes I do not know, but in any case further material will

* P. 39 (1919).

† P. Z. S. 1860.

no doubt clear up its identity, since we know its exact locality.

But whatever it is, any connection with such a typically "cinerea" species as *M. germana* may safely be eliminated from the study of this troublesome animal.

LXI.—*The Tuco-tuco of San Juan, Argentina.*

By OLDFIELD THOMAS.

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IN a small collection of mammals from the Province of San Juan made by Sr. Budin there occurs a series of a tuco-tuco allied to that of Catamarca, but apparently subspecifically distinct.

Ctenomys coludo johannis, subsp. n.

Essentially like *C. coludo* and *famosus*, but colour paler and greyer.

Size and other essential characters, including the larger size of the bullæ, as in *C. coludo*. Colour, however, averaging much less strongly buffy, approaching "drab-grey," the fore back, nape, and sides of head particularly grey. In some specimens the general colour almost suggests a chinchilla-grey, while others, again, are more distinctly drabby. On the whole, however, the average is distinctly paler and greyer. Below, the difference is still more marked, the ends of the hairs whitish with but faint tinge of buffy. Nasal patch blackish, much more strongly marked than in *coludo* and *famosus*. Caudal crest blackened terminally, this being almost always without darkening in *C. coludo* and *famosus*.

Skull about as in *coludo*, though the zygomata are less widely spread, the zygomatic breadth distinctly less than the bimeatal. Interparietal sutures rarely perceptible.

Dimensions of the type:—

Head and body 199 mm.; tail 97; hind foot 36.

Skull: greatest length 50; condylo-incisive length 48.7; zygomatic breadth 28; nasals 17.7 × 8.4; interorbital breadth 10; bimeatal breadth 30.2; palatilar length 21.8; bulla, oblique horizontal diameter 18, breadth at right angles to last 10; upper molar series (crowns) 8.4; greatest diameter of p^4 3.2.

Hab. Department of San Juan. Type from Cañada Honda. Alt. 500 m.

Type. Old male. B.M. no. 21. 4. 8. 20. Original number 1233. Collected 5th December, 1920, by E. Budin. Presented by Oldfield Thomas.